

SOBOTKIEWICZ, V.

Use of calcium carbide in cupola furnaces. Liver vest 11  
no. 3:84-87 '64.

STARK, St., MUDr; SOBOTKOVA, H., MUDr

Clinical studies on reorganization and therapy of gestoses.  
Cesk. gyn. 19 no3:172-179 My '54.

1. DFN-III. porodnicka klinika KU. Prednosta: Prof. MUDr  
R. Peter.  
(PREGNANCY TOXEMIAS, prevention and control,  
\*organiz.)

SOBOTKOVA, Helena

Hemosalpinx after a fall in the gynasium in a case of internal genital anomaly. *Cesk. gyn.* 25[39] no.1/2:106-107 Mr '60.

1. Katedra pro porodnictvi, gynekologii dospelych a deti FDL,  
KU Praha, vedouci katedry prof. MUDr. Rudolf Peter, Dr. Sc.  
(UTERUS abnorm.)  
(FALLOPIAN TUBES, dis.)

SOBOTKOVA, H.; KOVAR, J.; BLAHA, K.

Data on the configuration of nitrogen containing compounds. Pt. 17: Coll Cz chem 29 no.8:1898-1903 Ag '64

1. Institut fur organische Chemie and Biochemie, Tschechoslowakische Akademie der Wissenschaften, Prague (for Blaha). 2. Spolana, Neratovice (for Sobotkova). 3. Laboratorium fur Monosacharide, Technische Hochschule fur Chemie, Prague (for Kovar).

KOLEŠAR, J.; MECHIR, J. Technická spolupráca: SOBOTKOVA, J.; PARTL, L.

The effect of elevated body temperature on the functions of the respiratory system in chronic asthmatic bronchitis.  
Bratisl. lek. listy 45 no.10:593-597 31 My'65.

1. Fyziatricka klinika Lekarskej fakulty Univerzity Komenskeho v Bratislave a Vyskumny ustav pre fyziatriu, balneologiu a klimatologiu v Bratislave (veduci: prof. MUDr. J. Hensel).

MECHIR, J.; Technicka spolupraca: SOBOTKOVA, J.

Changes in the ventilation mechanism in bronchial asthma.  
Bratisl. lek. listy 45 no.8:486-495 31 0 '65.

1. Vyskumny ustav pre fyziatriu, balneologiu a klimatologiu,  
pobocka v Bratislave (riaditel prof. MUDr. J. Hensel).

SVOBODA, Zdenek; SOBOTKOVA, Miroslava

An unusual case of intracardiac calcification. Cesk. rentgenol.  
15 no.4:260-262 '61.

1. II interni klinika fakulty detskeho lekarstvi, prednosta prof.  
MUDr. R. Foit Rtg-oddeleni nemocnice Bulovky, klinicke zakladny Ustavu  
pro doskolovani lekaru, prednosta MUDr. J. Slanina.  
(HEART DISEASES case reports) (CALCIFICATION case reports)

JIRMANOVA, I.; SOBOTKOVA, M.; THESLEFF, S.; ZELENA, J.

Atrophy in skeletal muscles poisoned with botulinum toxin.  
Physiol. Bohemosl. 13 no.5:467-472 '64.

1. Institute of Physiology, Czechoslovak Academy of Sciences,  
Prague, and Department of Pharmacology, University of Lund,  
Sweden.



RUSSIA / Chemical Technology. Food Industry

H-28

Abs Jour : Ref Zhur - Khim., No 12, 1958, No 41461

Author : Sobotkova

Inst : Not given

Title : Evaluation of Hogs in a Slaughter House

Orig Pub : Socialist. zemed. 1956, 6, No. 15, 930-933.

Abstract : A description is given for a feeding technique whereby one can obtain hog carcasses with a large amount of lard and a sufficient amount of lean meat. The evaluation of hog carcasses in a slaughter house is done by comparing the sizes of the heads and legs, as well as comparing the ratio of the weights of the meat parts to the lard-containing ones. The determination is also made for water, proteins, fats, mineral salts in the meat and lard.

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CZECHOSLOVAKIA/Farm Animals. Swine

Q-2

Abs Jour: Ref Zhur - Bioll, No. 22, 1958, 101152

Author : Sobotkova, Olga

Inst : -

Title : Utilizing the Results of Experimental Fattening  
and Meat Productivity in Swine Breeding.

Orig Pub: Nas chov, 1957, No. 23, 637-640

Abstract: Fattening indicators of young stock arrived at  
by being related to their make and female  
parental lines (length of time needed to reach  
a 100 kg live weight, average daily weight  
gains, etc.) were compared to indicators of the  
same animals, obtained after they were slaugh-  
tered (weight of the slaughtered animal, per-  
centage of meaty parts, weight of head, width  
of sides, thickness of subcutaneous lard), as

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SOBOTKOWSKA, Krystyna; HECIAK, Mieczyslaw

Mixed tumors treated at the Surgical Clinic of Stomatology  
of the Silesian Academy of Medicine in Zabrze. Czas. stomat.  
18 no.8/9:1125-1130 Ag-3 '65.

1. Z Kliniki Chirurgii Stomatologicznej Slaskiej AM w Zabrze  
(Kierownik: prof. dr. M. Jankowski) i z Zakladu Anatomii Pato-  
logicznej Slaskiej AM w Zabrze (Kierownik: prof. dr. W. Niepo-  
lowski).

SOBOTKOWSKA, Krystyna; POGORZELSKA-STRONCZAK, Bogna

pilepsy as a cause of craniofacial fractures. Czas. stomat. 19  
no.1:47-50 Ja ' 66.

1. Z Kliniki Chirurgii Stomatologicznej Slaskiej AM w Zabrze  
(Kierownik: prof. dr. M. Jankowski).

SOBOTKOWSKI, Kazimierz

Disseminated ossification of the lung associated with mitral stenosis.  
Pol. tyg. lek. 17 no.8:302-305 19 F '62.

1. Z Zakładu Radiologii AM w Łodzi; kierownik-vacat; kurator: doc.  
dr med. L. Mazurek.

(HEMOSIDEROSIS compl) (LUNG DISEASES compl)  
(MITRAL STENOSIS case reports)

SOBOTKOWSKI, Kazimierz; KASPERSKA, Irena

A case of Crouzon-Åpert syndrome. Pol. tyg. lek. 22 no.23:914-917  
4 Je '62.

1. Z Zakładu Radiologii AM w Łodzi; kierownik: vacat, kurator: doc.  
dr med. L. Mazurek i z Zakładu Ortodoncji AM w Łodzi; kierownik: doc.  
dr stom. H. Kondrat-Wodzicka.

(HYPERTELORISM case reports)

SOBOTKOWSKI, Kazimierz; SZANIEWSKI, Henryk

A case of myositis ossificans of non-traumatic origin. Polski  
przeegl. radiol. 26 no.2:117-121 '62.

1. Z Zakladu Radiologii AM w Lodzi Kierownik -- vacat; Kurator:  
doc. dr med. L. Mazurek i z Przychodni Medycyny Pracy dla m. Lodzi  
Dyrektor: dr K.Wosik.

(MYOSITIS OSSIFICANS radiog)

POLAND

JANCZUK, Zbigniew, JEDRZEJEWSKA, Teresa, SOBUTKOWSKI, Kazimierz, and JEDEBSKI, Marian, Department of Preventive Stomatology (Zaklad Stomatologii Zachowawczej) (Director: Prof. Dr. Mieczyslaw RUCHS), the Department of Radiology (Zaklad Radiologii) ("Kurator": Docent, Dr. Ludwik MAZUREK), and the Second Clinic of Internal Diseases (II Klinika ChOROZ Wewnetrznych) (Director: Prof. Dr. Jerzy JAKUBOWSKI), all of the AM [Akademia Medyczna, Medical Academy] in Lodz.

"On the Treatment of Sjogren Syndrome, Clinical Observations."

Warsaw, Polski Tygodnik Lekarski, Vol 18, No 3, 14 Jan 63, pp 100-104.

Abstract: [Authors' English summary modified] Three cases, with fully developed Sjogren syndrome involving the eyes, mucosa and joints, as well as the parotid gland, are described. Hormone, vitamin, tonic, and other standard treatment was of no avail, and no way was found to alleviate the patients. Of the 27 references, 7 each are Western and German, and 13 are Eastern Bloc.



SOROTKOWSKI, Wacław

Radiological evaluation of adamantinomas of jaw bones. Pol.  
przeł. radiol. 28 no.4:313-321 JI-Ag '64.

1. Wydział Radiologii Akademii Medycznej w Łodzi.

TRONCZYNSKA, Jadwiga; SOBOTKOWSKI, Kazimierz

Anatomical conditions for the development of esophageal voice after laryngectomy. Otolaryng. Pol. 19 no.2:215-220 '65.

1. Z Kliniki Otolaryngologicznej Akademii Medycznej w Łodzi (Kierownik: prof. dr. med. A. Radziminski) i z Zakładu Radiologii Akademii Medycznej w Łodzi (p.o. Kierownika: dr. med. K. Sobotkowski).

1. Z Zakładu Radiologii AM w Łodzi

Use of radiography in the differential diagnosis of some  
diseases of the jaw. Wlad. lek. 18 no.11:923-929 1 Je '65.

1. Z Zakładu Radiologii AM w Łodzi (P.o. kierownik: dr. med.  
K. Sobotkowski).

SOBOTKOWSKI, Kazimierz; RECZYK, Julianna

Value of radiological tests in the diagnosis and differentiation of pathological processes of the salivary glands. Pol. przegl. radiol. 29 no.3:257-265 My-Je '65.

1. Z Zakladu Radiologii AM w Lodzi (p.o. Kierownik: dr. med. K. Sobotkowski) i z Kliniki Chirurgii Szczekowo-Twarzowej AM w Lodzi (Kierownik: doc. dr. med. J. Bardach).

SOBOTKOWSKI, W.; POTYNSKI, J.

"Energetic Measurements of a Carbide Furnace", p. 589, (PRZEMYSŁ CHEMICZNY, Vol. 10, No. 12, Dec. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

SOBOTKOWSKI, Witold, mgr inz.; ZELKOWSKI, Jacek, mgr inz.

Needs of the power-producing plant itself as a factor shaping the consumption of thermal power per unit in modern electric power plants. Pt. 1. Energetyka Pol 16 no.11:329-331 N '62.

SOBOTKOWSKI, Witold, mgr inz.; ZELKOWSKI, Jacek, mgr inz.

Power station needs as a factor shaping the over all heat  
consumption in modern power plants. Pt. 2. Energetyka Pol  
16 no.12:358-361 D '62.

FOLWARCZNY, Czeslaw, mgr inz.; SOBOTKOWSKI, Witold, mgr inz.;  
SUCHORAB, Antoni, inz.

Methods of performing acceptance tests of thermal equipment in  
power plants. Pt. 2. Energetyka Pol 18 no. 2 [i.e.5]; Suppl. Biul  
nauk techn energopemiar 10 no. 3:17-23 My '64.



FOLWARCZNY, Czeslaw, mgr inz.; SOBOTKOWSKI, Witold, mgr inz.; SUCHORAB,  
Antoni, inz.

Reliability and safety testing of thermal installations in  
power stations. Pt.1. Energetyka Pol 18 no.3:Supplement:  
Energopomiar 10 no.2:14-16 Mr'64

1. Pion Ciepłny, Zakład Badan i Pomiarow, Warszawa.

ECKSTEIN, Z.; SACHA, A.; SOBOTKA, W.; Urbanski, T.

On preparation and properties of 1-cyclooctenyl nitromethane. Bul  
Ac Pol chim 6 no.10:621-624 '58. (EEAI 9:6)

1. Institute of Organic Synthesis, Polish Academy of Sciences.  
Institute of Pharmacy, Warsaw. Presented by T. Urbanski.  
(Nitromethane) (Cyclooctene)  
(Cyclooctanone) (Olefins)

1. B. Th. H., Josef

Remarks or Comments: 7 copies of the report of the  
of Glassware Collection. Normalized 12 no. 1001-15 J1162

1. State Research Institute of Glass, Hradec Kralove.

L 32802-66 GW  
ACC NR: AT6016646

SOURCE CODE: CZ/2512/64/012/000/0177/0197

AUTHOR: Pros, Zdenek; Sobotova, Carmen; Waniek, Ludvik; Pribyl, Alois;

1/2  
37  
BTI

ORG: none

TITLE: The velocity distribution of elastic waves in the Pribram graywacke

SOURCE: Ceskoslovenska akademie ved. Geofysikalni ustav. Geofysikalni sbornik, v. 12, 1964, Prague, 1965, Prace, no. 196-214, 177-197

TOPIC TAGS: <sup>physical</sup> geology, electroacoustics, elastic oscillation, wave analyzer

ABSTRACT: The velocity of longitudinal elastic waves in the Pribram graywacke was measured in a continued study of uniformity in the mechanical properties of the rock. Samples from a vertical section of the pit at depths down to 1400 m were tested. The dependence of waves velocity on depth was determined by the electroacoustic method. It was established that this dependence is continuous and has a local maximum at a depth of 800-900 m. The change in the velocity gradient at this depth cannot be explained entirely by the change in density, or by the macroscopically noticeable change in the composition of the rock. Rather, it shows a correlation with the boundary (interface) between two geological structures which constitute the rock, called the Sadecky and the Tremoshensky graywacke; the boundary layer is rich in hematite. The geological characteristics of the rock are given. It is noted that the depth dependence  $\Delta v/\Delta p$  for the given samples was obtained through measurements of

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dependence of elastic wave on one-sided pressure. In turn, these measurements have demonstrated that the elastic anisotropy caused by the rock stratification and shown in upper strata is diminishing with increased pressure, i.e., in line with the increasing depth. The authors thank Doctor J. Vanek for valuable advice and suggestions, Mrs. N. Pick, and Messrs. K. Lomecky, and R. Havlik for devoted help in tests treating and evaluating measurement results. The paper was reviewed by K. Pec. [KP]  
Orig. art. has: 12 figures, 3 tables, and 1 formula.

SUB CODE: 08/ SUBM DATE: 24Mar64/ ORIG REF: 004/ OTH REF: 004.

Card 2/2 *mq5*

SOBOTOVICH, E.V.

19  
Distribution of radionuclides in various parts of uraninite.  
I. B. Starik, O. S. Melnikova, and E. V. Sobotovich. Byull.  
Komissii Oprezhen. Absolyut. Vozrast. 1955, No. 1, 39-41. Analysis of  
specimens taken from the outer surface, the mid-portion, and  
the central cores of specimens of uraninite, for content  
of U, Pb, Ra, Th X, and Ac X, resulted in the following  
findings. In good, intact specimens the content of the 6  
elements was const. through the thickness of the specimen,  
while in cracked and deformed specimens Ra, Ac, and U de-  
clined from the center to the periphery, while Th and Pb rose,  
indicating a leaching process which removed Ra at higher rate  
than U, Th, or Pb. Generally, peripheral parts of all speci-  
mens tended to be higher in Th and Pb than central parts  
and in the central portions the Ac/U ratio was  $1.7 \times 10^{-14}$   
instead of the normally expected  $2.06 \times 10^{-14}$ . Ra tends  
to migrate to the environment more than does U or the  
products of decomp. of actinouranium. The emanation  
coeffs. of powders of all the specimens from all parts of a  
specimen are of the same order of magnitude since diffusion

becomes less important. Isotopic compn. of Pb from cen-  
tral, well-preserved parts of specimens indicates good agree-  
ment with the local geol. indications of age; only  $Pb^{210}/Th$   
ratio leads to some disagreements. Isotope distribution in  
the outer portions of the specimens invariably gave a higher  
indication of age than indicated by other methods, although  
 $Pb^{210}/Pb^{214}$  ratio tended to give low results of age estn.

C. M. Kosolapov

Radium Inst. in Khlopun

SOROTOVICH, E. Y.

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4E4  
V. Determination of lead isotope composition in rocks. V. E. Starik and E. Y. Sorotovich. *Doklady Akad. Nauk S.S.S.R.* 111, 395-7 (1956).—Pb was sepd. from rocks by volatilization in a furnace at 1400°. The vapors were reduced with H and Pb was deposited on a cold surface. Preliminary tests showed that 80-90% of the Pb was recovered at a sublimation temp. of approx. 1/3 the m.p. of the rock. Pb was sepd. from the other volatile components by electrolysis of the nitrates. PbO<sub>2</sub> was deposited on the anode. The neutral Pb(NO<sub>3</sub>)<sub>2</sub> soln. was pptd. with KI and tested mass-spectrographically. Volatilization of Pb did not fractionate it isotopically. The accuracy of the method was confirmed by duplicate analyses of 2 granite samples. The isotope proportions found were  $Pb^{202}/Pb^{201} = 17.55$ ;  $10.40$ ;  $Pb^{203}/Pb^{201} = 15.54$ ;  $15.01$ ; and  $Pb^{204}/Pb^{201} = 37.29$ ;  $39.29$ . W. M. Sternberg

from org

STARIK, I.Ye.; SOBOTOVICH, E.V.; LOVTSYUS, G.P.; AVDZEYKO, G.V.;  
LOVTSYUS, A.V.

Mode of lead occurrence in natural formations [with summary in  
English]. Geokhimiia no.7:584-591 '57. (MIRA 11:1)

1.Radiyevyy institut AN SSSR, Leningrad.  
(Lead)



SOBOTOVICH, E. V.,

"Certain Problems of the Geochemistry of Lead Isotopes," Leningrad, 1958.  
(Dissertation presented and approved for the degree of Cand. Chem. Sci.)  
(Radium Inst. im. V. G. Khlotin).

SOBOTOVICH, E. V.

Sobotovich, E. V., G. V. Avzdeyko, G. I. Lovtsyus, A. V. Lovtsyus--Sublimation as a Method for Determining Isotope Contents of Lead.

The Sixth Session of the Committee for Determining the Absolute Age of Geologic Formations at the Department of Geologic--Geographical Sciences (OGGN) of the USSR Academy of Sciences at Sverdlovsk in May 1957

Izv. Ak Nauk SSSR, Ser. Geol., No. 1, 1958, p. 115-117 author Pekarskaya, T. B.

SOBOTOVICH, E. V.,

Sobotovitch, E. V., G. V. Avzdeyko, G. I. Lovtsyus, A. V. Lovtsyus - The Method of Locating Lead in Radioactive Minerals.

The Sixth Session of the Committee for Determining the Absolute Age of Geologic Formations at the Department of Geologic-Geographical Sciences (OGGN) of the USSR Academy of Sciences at Sverdlovsk in May 1957

The Sixth Session of the Committee for Determining the Absolute Age of Geologic Formations at the Department of Geologic-Geographical Sciences (OGGN) of the USSR Academy of Sciences at Sverdlovsk in May 1957.

Izv. Ak Nauk SSSR, Ser. Geol., No. 1, 1958, p. 115-117 author Pekarskaya, T. B.

Sublimation, 1

AUTHOR: Starik, I.Ye. and Sobotovich, E.V. 11-9-8/14

TITLE: Lead in Natural Formations and Its Isotopic Composition  
(Svinets v prirodnykh obrazovaniyakh i yego izotopnyy sostav)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, 1957,  
# 9, p 81-85 (USSR)

ABSTRACT: Lead in natural formations can occur in various forms. The stability of lead forms with respect to different temperatures and media is determined by their physico-chemical and mineralogical properties. In order to learn the possibility of fractionation of lead isotopes the authors carried out experiments with pitchblende from Ioachimsthal, Caledonian granite and a most ancient granite from Northern Karelia. The results of these experiments were the following:

1. During the sublimation of lead from the pitchblende in a hydrogen flow, the fractionation of different lead forms takes place, which leads to the change of isotopic composition of leads precipitated at different temperatures.
2. The shift of isotopic composition with temperature increase is directed toward the relative increase of the content of radiogenic lead.
3. The investigation of other samples containing lead has

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SOBOTOVICH, E. V. Cand Chem Sci -- (diss) "Certain problems of the geochemistry of lead isotopes." Len, 1958. 22 pp (Radium Inst im V. G. Khlopin, Acad Sci USSR), 150 copies (KL, 14-58, 110)

SECRET

Isotopes for medical research. Biol. Med. po op. No. 1001. 1961.  
(MIR 10:11)  
(Lend--Isotopes)

ARIA, I.P.; SUBA ...

H. ... .. Bill. ... ..  
... ..  
(L-1)

STALIK, I.Ye.; SOBOTOVICH, E.V.; LOVTSYUS, G.P.; NESTEROV, V.P.

Radioactive control of pyrochemical means of quantitative extraction  
of lead from natural formations. Trudy kom.anal.khim. 9:341-348 '58.  
(MIRA 11:11)

(Lead--Metallurgy)

(Radioactive tracers)



AUTHORS:

TIME:

PERIODICAL:

ABSTRACT:

Starik, I. Ye., Corresponding Member,  
Academy of Sciences, USSR, Shats, M. M.,  
On the Age of Meteorites (O vozraste meteoritov)  
(USSR) Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 3, pp 424-426  
SOV/20-123-3-11/54  
Sobotovitch, E. V.

The data on the content of uranium, lead and on the isotopic composition of lead in the meteorites permit a successful investigation of some cosmogonic problems, especially the determination of the age of the meteoric bodies and of the Earth. From the data on the amount of Pb 207 and Pb 206 in meteorites, C. Patterson found the value of  $4.5 \cdot 10^9$  years for their age. This value is now considered to be the most reliable one. The determination of meteorite age from the data on other lead-uranium isotopes is also of considerable interest. The results of some special investigations of meteorite age from the concentration of uranium in stony meteorites and in pallasite olivine amounts to  $2 \cdot 10^{-7}$  g/g, but in iron meteorites it is

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On Age of Meteorites

1.10-8 g/g.

According to the authors' results, the content of uranium in the majority of the troilite, schreibersite, and silicate inclusions in iron meteorites is higher than their concentration in the iron-nickel mass of the meteorites. The content of uranium in the iron-nickel mass of the meteorites defined, it seems to be a number  $1 \leq n < 10$ . All the available stone meteorites have approximately the same lead content and the lead content of iron meteorites is by 1-2 orders higher than that of stony meteorites. A diagram gives the ratio  $Pb^{207}/Pb^{204}$  as a function of the ratio  $Pb^{206}/Pb^{204}$ . All the hitherto available data on meteorite lead (with the exception of Norton County (Norton County)) are on one straight line of Norton County (Norton County) which corresponds to an age of 4.55 billion years. The anomalous isotopic composition of the meteorite Nuevo Laredo requires additional investigations. The second table gives the values for the age of stony meteorites which were deduced from the ratios  $Pb^{206}/U^{238}$ ,  $Pb^{207}/U^{235}$ , and

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City (Forest City) 5.10 years) were found, values of the uranium content determined the contents of mass-isotopic analysis of the sites. The lower values of the ratios  $Pb^{207}/U^{235}$  and especially

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error limits of the determination of the discussions lead to the following investigated meteorites, the isotopic does not display any noticeable anomalies of uranium and lead in them is ant. The age of the meteorites deduced from data agrees with the modern hypotheses about their age. The authors thank the Komitet po meteoritam (Committee for meteorites), which put the samples at their disposal, and

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Card 3/4

AUTHORS:

Starik, I. Ye., Corresponding Member, SOV/20-123-3-11/54  
Academy of Sciences, USSR, Shats, M. M., Sobotovich, E. V.

TITLE:

On the Age of Meteorites (O vozraste meteoritov)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 3, pp 424-426  
(USSR)

ABSTRACT:

The data on the content of uranium, lead and on the isotopic composition of lead in the meteorites permit a successful investigation of some cosmogonic problems, especially the determination of the age of the meteoric bodies and of the Earth. From the data on the amount of

$Pb^{207}$  and  $Pb^{206}$  in meteorites, C. Patterson found the value of  $4.5 \cdot 10^9$  years for their age. This value is now considered to be the most reliable one. The determination of meteorite age from the data on other lead-uranium isotopes is also of considerable interest. The results of some special investigations of the amount of uranium in meteorites are given in a table. The concentration of uranium in stony meteorites and in pallasite olivine amounts to  $2 \cdot 10^{-7}$  g/g, but in iron meteorites it is

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On the Age of Meteorites

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3(1)  
AU

$1.10^{-8}$  g/g. According to the authors' results, the content of uranium in the majority of the troilite, schreibersite, and Silicate inclusions in iron meteorites is higher than their concentration in the iron-nickel mass of the meteorite. The content of uranium in the iron-nickel mass of the meteorites Sikhote-Alin' and Chinge is lower than  $n.10^{-9}$  g/g (n is not defined, it seems to be a number  $1 \leq n < 10$ ). All the hitherto available stone meteorites have approximately the same lead content and the lead content of iron meteorites is by 1-2 orders higher than that of stony meteorites. A diagram gives the ratio  $Pb^{207}/Pb^{204}$  as a function of the ratio  $Pb^{206}/Pb^{204}$ . All the hitherto available data on meteorite lead (with the exception of Norton County (Norton Kaunty)) are on one straight line (isochrone) the inclination of which corresponds to an age of  $4.45 \pm 0.05$  billion years. The anomalous isotopic composition of the meteorite Nuovo Laredo requires additional investigations. The second table gives the values for the age of stony meteorites which were deduced from the ratios  $Pb^{206}/U^{238}$ ,  $Pb^{207}/U^{235}$ , and

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On the Age of Meteorites

$Pb^{207}/Pb^{206}$ . For the chondrites Forest City (Forest Siti) and Modok anomalous high values ( $> 20.10^9$  years) were found, which are probably due to too low values of the uranium content in these chondrites. The authors determined the contents of these elements and carried out a mass-isotopic analysis of the lead taken from the same meteorites. The lower values of the age, which were due to the ratios  $Pb^{207}/U^{235}$  and especially  $Pb^{206}/U^{238}$ , are within the error limits of the determination of U and Pb ( $\pm 30\%$ ). The above discussions lead to the following conclusion: for the investigated meteorites, the isotopic composition of lead does not display any noticeable anomalies and also the content of uranium and lead in them is approximately constant. The age of the meteorites deduced from these experimental data agrees with the modern hypotheses about their age. The authors thank the Komitet po meteoritam (Committee for meteorites) which put the samples at their disposal, and

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On the Age of Meteorites

also B. B. Piotrovskiy and S. I. Rudenko for their help.  
There are 1 figure, 2 tables, and 11 references, 3 of which  
are Soviet.

ASSOCIATION:

Radiyevyy institut Akademii nauk SSSR ( Radium Institute of the  
Academy of Sciences, USSR)

SUBMITTED:

July 26, 1958

Card 4/4

STARIK, I.Ye.; SOBOTOVICH, E.V.; LOVTSYUS, G.P.; LOVTSYUS, A.V.; SHATS, M.M.

Determination of the lead content and of its isotope composition  
in iron meteorites. Radiokhimiia 1 no.5:596-602 '59.

(MIRA 13:2)

(Lead--Analysis) (Meteorites)

SOV/11-59-9-9/18

3(5)

AUTHORS:

Starik, I.Ye., Sobotovich, E.V. and Shats, I.M.

TITLE:

On the Problem of the Age of Tektites

PERIODICAL:

Izvestiya Akademii nauk SSSR, Seriya geologicheskaya, 1959, Nr 9, pp 90-91 (USSR)

ABSTRACT:

The origin of tektites has not yet been determined. Some geologists suppose that the tektites are of cosmic origin. Their absolute age, determined by the K-Ar method by E.K. Gerling and M.L. Yashchenko, is between  $1.7 \times 10^7$  and  $7.3 \times 10^6$  years, that is considerably less than the absolute age of stone meteorites. The authors determined the age of a tektite by the lead method. Presuming that the tektite is of cosmic origin, the authors fixed its age between  $4.7 \times 10^9$  and  $3.7 \times 10^9$  years. On the other hand, presuming that it is of terrestrial origin and is a product of remelting of some sedimentary rocks, and taking the isotope composition of Tertiary or Quaternary

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SOV/11-52-9-2/18

On the Problem of the Age of Tektites

lead, the authors fixed the age of the tektite at 3 billion years, instead of a few million as was to be expected. Thus, say the authors, the substance from which tektites originated must be of cosmic origin, although further research is necessary. There is 1 Soviet and 1 English reference.

ASSOCIATION: Radiyevyy institut imeni V.G. Khlopina (The Radium Institute imeni V.G. Khlopina), Leningrad

SUBMITTED: 9 September 1958

Card 2/2

3(i)  
AUTHORS: Starik, I. Ye., Corresponding Member, SOV/20-128-4-14/65  
AS USSR, Sobotovich, E. V., Lovtsyus, G. P., Shats, M. M.,  
Lovtsyus, A. V.

TITLE: Isotopic Composition of Lead in Iron Meteorites

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 4, pp 688-690  
USSR

ABSTRACT: C. Patterson et al. (Refs 1,3) found the same composition  
with respect to lead isotopes in 3 different meteorites,  
i.e. Pb<sup>204</sup> 1; Pb<sup>206</sup> 9.5; Pb<sup>207</sup> 10.4; Pb<sup>208</sup> 29.5. His data are  
in good accordance with the theoretically predicted isotopic  
composition of lead in iron meteorites. Several authors  
theoretically computed the isotopic composition of the original  
lead, extrapolating back into the past (4.5 billion years) the  
change in the isotopic composition of the lead of varying age  
found in ore. The values obtained in this way are close to  
those established experimentally by Patterson. The authors  
intended to carry out a close investigation of the problem  
mentioned in the title. They first examined the lead content  
of the Sikhote-Alin' and Chinge meteorites (I. Ye. Starik,

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## Isotopic Composition of Lead in Iron Meteorites

SOV/20-128-4-14/65

E. V. Sobotovich, G. P. Lovtsyus, Ref 2). The lead content of these meteorites in the metallic phase is less by at least one order of magnitude than that published by Patterson for the Cañon Diavolo meteorite ( $3.7 \cdot 10^{-7}$  g/g). The isotopic composition of the troilite and of the metallic phase of the Sikhote-Alin' meteorite are entirely different from the Patterson data. Because of this discrepancy the authors analyzed the meteorites examined by Patterson. The meteorite samples were chemically separated and the lead was pyrochemically removed (E. V. Sobotovich, Ref 4). Table 1: degree of impurity of the meteorite caused by foreign lead. This impurity caused by foreign lead is only 10-24%. Assuming that iron meteorites contain original lead, the impurity by ordinary lead must be at least 1000% of its cosmic content. These experiments confirmed the results obtained on content and isotopic composition of the lead in the analyzed iron meteorites and they made possible to introduce a correction for the foreign-lead impurity. Table 2 contains data on the isotopic composition of the lead in 3 iron meteorites and the troilites contained in them. According to it the composition

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Isotopic Composition of Lead in Iron Meteorites

SOV/20-128-4-14/65

of the Sikhote-Alin' and Hanbury meteorites is the usual and the isotopic composition of the lead in the ore is analogous to an age of several hundreds of millions of years. The results obtained by the authors are factually valid for the lead contained in the iron meteorite and they cannot be explained by impurities caused by ordinary lead during the analysis. According to the results of the present paper the meteorites have no common genesis in spite of the generally accepted theory. Possibly some of them do not belong to our solar system or they were formed under conditions when lead originating from radioactive processes was already present. These meteorites therefore cannot be as old as was previously assumed. If these meteorites do not originate from our solar system, nothing precise can be said about them. If they come from our solar system they have developed 400-500 millions of years ago. The authors express their acknowledgements to the Komitet po meteoritam AN SSSR (Committee for Meteorites of the AS USSR) and the Estonskiy geologicheskii institut (Estonian Geological Institute) for putting at their disposal the meteorite samples. There are 2 tables and 4 references, 2 of which are Soviet.

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Isotopic Composition of Lead in Iron Meteorites

SOV/20-128-4-14/65

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR  
(Radium Institute imeni V. G. Khlopin of the Academy of  
Sciences, USSR)

SUBMITTED: July 6, 1959.

Card 4/4

KASHTAN, M.S.; SOBOTOVICH, E.V.; KHILOPINA, T.N.

Raising the sensitivity of the isotopic spectral analysis  
of lead. Opt.i spektr. 8 no.1:23-26 Ja '60.  
(MIRA 13:7)

(Lead--Spectra)

STARIK, I.Ye.; SOBO TOVICH, E.V.; SHATS, M.M.

Using the lead-isotope method in determining the age of  
meteorites. Meteoritika no.18:88-91 '60.

(MIRA 13:5)

(Meteorites--Age) (Lead--Isotopes)

COVERAGE: This collection of 26 articles on problems in meteoritics includes the Transactions of the Eighth Meteoritic Conference which took place in Moscow, June 3 - 5, 1958. An introductory article reviews recent progress in the field, particularly in the matter of determining the age of meteorites. Individual articles discuss the fall, physical and chemical properties, and age of meteorites. The danger presented by meteors to artificial earth satellites is discussed. V.G. Posenkov describes the theory and aduces computations for determining the distribution of ozone in the atmosphere during lunar eclipses. References accompany individual articles.

STARIK, I.Ye.; SOBOTOVICH, E.V.; LOVTSYUS, G.P.

Determining the lead content of iron meteorites. Meteoritika no.19:  
100-102 '60. (MIRA 13:11)  
(Meteorites--Analysis) (Lead)



S/020/60/134/003/006/020  
B019/B060

AUTHORS: Starik, I. Ye., Corresponding Member of the AS USSR,  
Sobotovich, E. V., Lovtsyus, G. P., Shats, M. M.,  
Lovtsyus, A. V.

TITLE: Lead and Its Isotopic Composition in Iron Meteorites

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 3,  
pp. 555 - 558

TEXT: By way of introduction the authors refer to their discovery (Ref. 1) that meteorites contain lead with various isotopic compositions. The present article deals with the investigation of all main groups of iron meteorites (octahedrites of various structure, hexahedrites, and ataxites). From two to three quantitative analyses were made on all of the 12 meteorites investigated, and the isotopic composition of lead was determined at the same time. The results tabulated in Table 1 show that in the majority of these meteorites the isotopic composition of lead corresponds to that of terrestrial lead. No intermediate isotopic composition of lead was discovered. Judging from their composition, the

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Lead and Its Isotopic Composition in Iron  
Meteorites

S/020/60/134/003/006/020  
B019/B060

12 meteorites can be classified into two groups. The first comprises four meteorites of the same isotopic composition of lead as was first ascertained by Patterson (Ref. 2) and later by the authors themselves. These meteorites are octahedrites of various structures and contain

$1 - 2 \cdot 10^{-7}$  g Pb per gram. The second group comprises the remaining eight meteorites containing lead with an isotopic composition corresponding to terrestrial lead of various ages. All principal meteoritic groups are represented here. All hexahedrites and ataxites thus belong to that group which contains lead in terrestrial isotopic composition. In them, the lead concentration lies at the lower distribution limit of


$2 - 4 \cdot 10^{-8}$  g Pb per gram. The same lead content was established for coarsely structured octahedrites. A lead content of  $2 \cdot 10^{-7}$  g Pb per gram was found for medium-structured octahedrites. The first group did not exhibit any marked inhomogeneity in the lead distribution, while the inhomogeneous lead distribution in the second group accounted for difficulties encountered in the determination of the lead content. There are cases in which meteoritic surface zones contain more or less lead

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Lead and Its Isotopic Composition in Iron  
Meteorites

S/020/60/134/003/006/020  
B019/B060

than the core. Closer studies are required to explain this. No relationship was established between the lead content and the isotopic composition on the one hand, and the type and structure of iron meteorites on the other. Reference is made to the one to two times larger lead content in troilite inclusions as compared with the content in the iron-nickel phase. Indications regarding the formation of iron meteorites were inferred from the existence of the two groups. The conclusion is drawn from the existence of two analogous groups in stony meteorites that the analogous groups originate from a parental body. The authors thank L. G. Kvash and A. A. Yavnel' for their valuable advice. They further thank the komitet po meteoritam AN SSSR (Committee on Meteorites of the AS USSR), the komitet po meteoritam AN BSSR (Committee on Meteorites of the AS BSSR), the Tartuskiy geologicheskii muzey (Tartu Geological Museum), and the Deningradskiy gornyy muzey (Leningrad Mining Museum). There are 1 table and 5 references: 3 Soviet and 2 British.



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Lead and Its Isotopic Composition in Iron  
Meteorites

S/020/60/134/003/006/020  
B019/B060

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR  
(Radium Institute imeni V. G. Khlopin of the Academy of  
Sciences USSR)

SUBMITTED: June 4, 1960

Card 4/4

STARIK, I.Ye.; SOBOTOVICH, E.V.; LOVTSYUS, G.P.

Pyrochemical methods for lead separation from natural formations.  
Biul.Kom.po opr.abs.vozr.geol.form. no.4:114-127 '61. (MIRA 15:1)  
(Lead)

S/031/62/000/005/019/112  
B158/B110

AUTHORS: Sterik, I. Ye., Sobotovich, E. V., Lovtsyus, A. V., Leont'yev, V. G.

TITLE: Separation of chemical forms of lead

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 119, abstract 5913 (Byul. Komis. po opredeleniyu absolyutn. vozrasta geol. formatsiy, AN SSSR, no. 4, 1961, 128 - 135)

TEXT: A method of high temperature sublimation of lead is used for a study of the forms in which Pb is found in natural formations (RZh Khim, 1962, 1273). Fractional sublimation of Pb in uranium pitch was carried out at 700°C in a current of N<sub>2</sub> (purified of O<sub>2</sub> by passing through CuO at 500°C). Under these conditions, only PbS is sublimated. At 900°C the mixture of residual PbS and metallic Pb may be sublimated; at 1200°C the residual metallic Pb is sublimated as well as part of the PbSO<sub>4</sub>, which is converted to PbO. After driving off the Pb in a current of N<sub>2</sub>, when its

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STARIK, I.Ye.; SOBOTOVICH, E.V.; LOVTSYUS, G.P.; SHATS, M.M.; LOVTSYUS, A.V.

Isotopic constitution of lead in iron meteorites. Meteoritika no.20:  
103-113 '61. (MIRA 14:5)

(Meteorites) (Lead—Isotopes)

STARIK, I.Ye.; SOBOTOVICH, E.V.; SHATS, M.M.; LOVTSYUS, G.P.

Uranium and lead in tektites. Meteoritika no.20:204-207 '61.  
(MIRA 14:5)

(Tektite) (Lead) (Uranium)



STARIK, I.Ye.; SOBOTOVICH, E.V.

Age of meteoritic bodies and the Earth, based on radioactivity.  
Izv.AN SSSR. Ser.geol.26 no.10:72-83 0 '61. (MIRA 14:9)

1. Radiyevyy institut AN SSSR, Leningrad.  
(Earth-age) (Meteorites)

S/026/62/000/005/004/010  
D036/D113

AUTHORS: Starik, I.Ye., Corresponding Member (see Association) and  
Sobotovich, E.V., Candidate of Chemical Sciences (Leningrad)

TITLE: The age of the Earth

PERIODICAL: Priroda, no. 5, 1962, 75-80

TEXT: This is a popular description of methods of determining the age of the Earth, particularly radioactive methods based on the contents of radioactive decay products, such as lead and strontium, in rock and meteor samples. The authors themselves analyzed 14 iron meteorites, 5 of which contained lead of the same isotopic composition as found in the "Devil's Canyon" meteorite, while in 9 this content corresponded to that of terrestrial mineral lead tens to hundreds of millions of years old. The Yardymly (Azerbaydzhan) meteorite is said to belong to the latter group of meteorites. Figures given for the Earth's age tally with those generally accepted.

ASSOCIATION: AN SSSR (Starik)

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S/169/62/000/012/004/095  
D228/D307

AUTHORS: Sobotovitch, E.V. and Grashchenko, S.M.

TITLE: Question of the possibility of determining the age of rocks from their uranium, thorium, and lead isotope content

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 12, 1962, 9-10, abstract 12A77 (Byul. Komis. po opredeleniyu absolyutn. vozrasta geol. formatsiy, AN SSSR, no. 5, 1962, 63-71)

TEXT: The isotopic composition of lead is determined by the correlation of primary lead, present in a rock from its crystallization, and radioactive lead, which has accumulated during the life of the rock. The age of a series of rock samples can be ascertained from its known concentration of uranium, thorium, and lead isotopes. Such determinations are feasible if the isotopic composition of primary lead is the same in all samples, the ratio of lead to uranium and thorium differs in different samples, and

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Question of the possibility ...

S/169/62/000/012/004/095  
D228/D307

the lead-uranium and lead-thorium ratios have not changed during the life of the samples at the expense of additions or losses of parent elements or their decay products. Systems of equations, including those for the age of a rock and the isotope content of primary lead, are compiled from the uranium, thorium, and lead isotope concentrations measured in the samples. The solution of the system of equations is possible by graphical methods and allows the age to be ascertained from 3 independent correlations together with the isotopic composition of primary lead. Graphical methods are suggested for processing the analytical data and for establishing the age of a rock, in which there has been one alteration in part of the lead-uranium ratio (loss or addition of lead or uranium), and the time of this alteration. The experimental precision, the age of a rock, the lead-uranium ratio in it, and other factors govern the possibility of age calculation by any particular method.  
[Abstracter's note: Complete translation]

Card 2/2

STARIK, I.E., SOBOTOVICH, E.V., SHATZ, M.M., LOVTZUS, G.P.

Uranium and lead in the "Tectites."

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"METEORITKA" (Meteorites-Studies) Issue no. 20 - 1961, sponsored by the  
"Committee on Meteorites" of the Soviet Academy of Sciences - Moscow - 1961,  
208 pages, and containing Collected Works ("Trudy") of the "9th Meteorite Conference"  
Organized by the Committee on Meteorites of the Soviet Academy of Sciences and  
Held in KIEV on 2-4 June 1960.

STARIK, I.Ye.; LOVTSYUS, G.P.; SOBOTOVICH, E.V.; GRASHCHENKO, S.M.;  
SHATS, M.M.; LOVTSYUS, A.V.

Isotopic composition of lead in meteorites in connection with their  
origin. Biul.Kom.po opr.abs.vozr.geol.form. no.5:12-25 '62.  
(MIRA 15:11)

(Meteorites) (Lead—Isotopes)

STARIK, I.Ye.; VOROB'YEV, G.G.; SOBOTOVICH, E.V.; SHATS, M.M.;  
GRASHCHENKO, S.M.

Origin and age of tektites. Biul.Kom.po opr.abs.vozr.geol.form.  
no.5:26-34 '62. (MIRA 15:11)  
(Tektite) (Lead--Isotopes)

S/534/62/000/022/001/002  
I033/I240

AUTHORS: Starik, I.Ye., Sobotovich, E., Shats, M.M. and  
Crashenko, S.M.

TITLE: The origin of tektites

SOURCE: Akademiya nauk SSSR, Komitet po meteoritam.  
Meteoritika. no. 22. Moscow, 1962, 97-103

TEXT: The data on concentration of U and Pb, and the isotopic composition of the latter, for 7 samples of tektites, were treated mathematically in order to determine their age and possible origin. A few different methods show that the age of tektites is practically equal to zero. The isochrone equations calculated by the least squares method

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S/007/63/000/003/001/003

AUTHOR: Starik, I. Ye., Sobotovich, E. V., Shats, M. M.

TITLE: On the problem of origin of meteorites and tectites

PERIODICAL: Geokhimiya, no. 3, 1963, 245-253

TEXT: Article considers experiments in determining the time of formation of various stages of meteoritic bodies by use of the isotope of lead content. Differences in amounts of lead isotopes detected in two groups of meteorites allowed construction of isochrones with coordinates of  $Pb^{207}/Pb^{204}$ ,  $Pb^{206}/Pb^{204}$ . The tangent of isochrone angle of inclination permitted estimation of the time required to consolidate the meteoritic body depending upon differentiation time of the silicate and metallic phases. Equations for the isochrones are: Group I (containing primary lead):

$$Pb^{207}/Pb^{204} = 3.32 + 0.75 Pb^{206}/Pb^{204} \quad (a)$$

Group II: (containing more radioactive lead)

$$Pb^{207}/Pb^{204} = 9.31 + 0.36 Pb^{206}/Pb^{204} \quad (b)$$

In spite of this, the considerable error of equation (a) and present state of

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S/007/63/000/003/001/003

On the problem of origin....

knowledge of the composition and structure of meteorites do not allow firmly establishing genetic connections between stone and iron meteorites.

Concluded that in spite of further studies showing the abundance of uranium, thorium, lead, and lead isotopes in tectites, their relatively young age does not contradict the cosmic or mixed theory of tectite origin.

Card 2 of 2

SOBOTOVICH, E.V.; GRASHCHENKO, S.M.; LOVTSYUS, A.V.

Isotopic composition of lead in the oldest rocks. Radiokhimiia 5  
no.2:157-160 '63. (MIRA 16:10)

STARIK, I.Ye.; SOBOTOVICH, E.V.

Geochemistry of lead isotopes. Izv. AN SSSR. Ser.geol. 28  
no.3:40-53 Mr '63. (MIRA 16:2)

1. Radiyevyy institut imeni V.G. Khlopina, Leningrad.  
(Lead isotopes)

SOBOTOVICH, E.V.; GRASHCHENKO, S.M.; ALEKSANDRUK, V.M.; SHATS, M.M.

Determining the age of ancient rocks by the lead-isochronous  
and isotope-spectrum strontium methods. Izv. AN SSSR. Ser.  
geol. 28 no.10:3-14 0 '63. (MIRA 16:11)

1. Radiyevyy institut imeni V.T. Khlopina, Leningrad.

KACHALA, N.G.; KALAFINA, T.N.; SOBOLEVICH, A.V.; LUTSENKO, A.V.

Comparison of the results of the spectral and mass spectrometric  
determination of the isotope composition of lead microquantities.  
Metod. opr. abs. vozr. geol. obr. no.6:67-71 '64 (MIRA 18:2)

SOBOTOVICH, E.V.; LOVTSYUS, G.P.; LOVTSYUS, A.V.

New data on the content and isotopic composition of lead  
in stone meteorites. Meteoritika no.24:29-33 '64.  
(MIRA 17:5)

L 10669-65 EWT(1)/EWT(m)/EWG(v)/EWA(d)/EEC-4/EEC(t) Pe-5/Pae-2 AFETR/

AFWL/ASD(f)-2/DIAAP GW

ACCESSION NR: AT4047021

S/2534/64/000/025/0040/0074

AUTHOR: Sobotovich, E. V.

TITLE: Radiogenic and cosmogenic isotopes<sup>19</sup> in meteorites and cosmochemistry <sup>B</sup>

SOURCE: AN SSSR. Komitet po meteoritam. Meteoritika, no. 25, 1964, 40-74

TOPIC TAGS: meteorite, radiogenic isotope, cosmogenic isotope, cosmochemistry, meteor matter

ABSTRACT: The elemental and isotopic composition of meteorites<sup>12</sup> gives an indication of the processes which cosmic matter has experienced from the time of development of the nuclei of the elements to the time of the falling of the meteorites on the earth. In each of the life stages of meteor matter, there was formation or redistribution of radioactive, radiogenic, cosmogenic and stable isotopes. Almost the full range of half-life periods of radioactive isotopes, from 28 days to  $4.3 \cdot 10^{10}$  years, makes it possible to define certain stages in the history of meteor matter and evaluate their intensity. This requires a study of the distribution of a number of isotopes, clarification of the way in which they were formed, and comparison of data on different isotopic relations. This has been done in this lengthy paper, making it possible for the author to propose the following stages in the history of meteor matter. 12-4.7 billion years ago: Formation of the nuclei of

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elements by discrete nucleosynthesis. The synthesis of the greater part of the heavy elements ended approximately six billion years ago. 4.7-4.5 billion years ago: Consolidation of small bodies of asteroidal size and their rapid heating due to short-lived radioactivity over a period of several (up to 20) million years after the end of nucleosynthesis. In this same period there was a separation of these bodies into silicate and metallic phases and thermal disintegration. 4.5-3.6 billion years ago: Formation of a secondary planetary body (not more than 1-2 lunar radii) from the products of decay of the primary bodies and primary cosmic dust. 3.6-0.5 billion years ago: Gradual heating and differentiation of this body and destruction. If there were two secondary bodies they could have suffered destruction upon converging (attainment of the Roche limit). 2.3-0.01 billion years ago: Breakup of bodies of asteroidal size and beginning of the time of exposition. "In conclusion, the author wishes to express deep appreciation to his teacher, the late I. Ye. Starik, Corresponding Member AN SSSR, for valuable advice, Academician V. G. Fesenko, Doctor Ye. L. Krinov, Doctor B. Yu. Levin, G. G. Vorob'yev and A. A. Yavnel for detailed discussion of this paper at the Eleventh Meteorite Conference in Leningrad (1962) and also to his immediate associates M. M. Shats, G. P. Lovtsyus and S. M. Grashchenko, who took part in developing the hypotheses". Orig. art. has: 13 tables and 9 figures.

Card 2/3

L 10669-65

ACCESSION NR: AT4047021

ASSOCIATION: Komitet po meteoritam AN SSSR. (Committee on Meteorites, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: ES, AA

NO REF SOV: 016

OTHER: 056

Card 3/3

AFANAS'YEV, G.D.; SHCHERBAKOV, D.I.; SEMENENKO, N.P.; SOBOTOVICH, E.V.;  
PEKARSKAYA, T.B.

Iosif Evseevich Starik, 1902-1964; obituary. Izv. AN SSSR. Ser.  
geol. 29 no.10:122-124 0 '64. (MIRA 17:11)

SOBOTOVICH, E.V.; GRASHCHENKO, S.M.

Isotope composition of recent leads as a criterion of the age of  
isolated igneous rock samples. Izv. AN SSSR. Ser.Geol. 30 no.4:3-  
9 Ap '65. (MIRA 18:4)

1. Radiyevyy institut im. V.G.Khlopina, Leningrad.

SOBOTOVICH, Ivan Dmitriyevich; SOBOTOVICH, Yevdokiya Pavlovna; SYTIN, P.V.  
redaktor istoricheskikh nauk, nauchnyy redaktor; FEDYAYEVA, N.A.,  
redaktor izdatel'stva; KRASNAYA, A.K., tekhnicheskiiy redaktor

[Moscow from the deck of a motorship; a guidebook] Moskva s borta  
teplokhoda; putevoditel'. Moskva, Rechnoi transport, 1955. 214 p.  
(Moscow--Description) (MLRA 9:10)

SOBOTOVICH, Ivan Dmitriyevich; SOBOTOVICH, Yevdokiya Pavlovna; LOPATIN, P.I.,  
redaktor; ROMANOVSKIY, I.S., redaktor; ~~FEDYAYEVA~~, N.A., redaktor  
izdatel'stva; KRASHAYA, A.K., tekhnicheskij redaktor

[Moscow from the deck of motor ship; a guidebook] Moskva s borta  
teplokhoda; putevoditel'. Izd. 2-oe. Moskva, Izd-vo "Rechnoi  
transport," 1956. 259 p. (MLRA 9:9)  
(Moscow--Description)

SOBOTOVICH, Ivan Dmitriyevich; SOBOTOVICH, Yevdokiya Pavlovna;  
ZAREYEV, G.S., retsenzent; FRDYAYEVA, N.A., red.izd-va;  
BODROVA, V.A., tekhn.red.

[Down the Moscow canal; a guidebook] Po kanalu imeni Moskvyy;  
putevoditel'. Moskva, Izd-vo "Rechnoi transport," 1959. 86 p.  
(Moscow Canal--Guidebooks) (MIRA 12:10)

SOBOTOVICH, Ivan Dmitriyevich; SOBOTOVICH, Yevdokiya Pavlovna;  
SOKOLOVSKIY, Yu.Ye., retsenzent; IVSHIN, Ye.A., retsenzent;  
TYUKAVIN, I.N., red. izd-va; BODROVA, V.A., tekhn. red.

[Along the Moscow Canal] Po kanalu imeni Moskvyy. Moskva, Izd-  
vo "Rechnoi transport," 1962. 123 p. (MIRA 15:5)  
(Moscow Canal region--Guidebooks)



SOBOTOVICH, V.P.

Our experience in preparing distilled water and conveying it  
to the assistant's table. Farmatsev. zhur. 17 no 5: 3-75 '62.

(MIRA 17:9)

1. Upravlyayushchiy aptekoy No.1, Zhukovskiy.

SOBOTOVICH, Ivan Dmitriyevich; SOBOTOVICH, Yevdokiya Pavlovna; SYTIN, P.V.  
koktor istoricheskikh nauk, nauchnyy redaktor; ~~PEDYAYEVA~~, N.A.,  
redaktor izdatel'stva; KRASNAYA, A.K., tekhnicheskiy redaktor

[Moscow from the deck of a motorship; a guidebook] Moskva s borta  
teplokhoda; putevoditel'. Moskva, Rechnoi transport, 1955. 214 p.  
(Moscow--Description) (MLRA 9:10)

SOBOTOVICH, Ivan Dmitriyevich; SOBOTOVICH, Yevdokiya Pavlovna; LOPATIN, P.I.,  
redaktor; ROMANOVSKIY, I.S., redaktor; FEDYAYEVA, N.A., redaktor  
izdatel'stva; KRASNAYA, A.K., tekhnicheskiy redaktor

[Moscow from the deck of motor ship; a guidebook] Moskva s borta  
teplokhoda; putevoditel'. Izd. 2-oe. Moskva, Izd-vo "Rechnoi  
transport." 1956. 259 p. (MLRA 9:9)  
(Moscow--Description)

SOBOTOVICH, Ivan Dmitriyevich; SOBOTOVICH, Yevdokiya Pavlovna;  
ZAREYEV, G.S., retsenzent; FEDYAYEVA, N.A., red.izd-va;  
BODROVA, V.A., tekhn.red.

[Down the Moscow canal; a guidebook] Po kanalu imeni Moskvyy;  
putevoditel'. Moskva, Izd-vo "Rechnoi transport," 1959. 86 p.  
(Moscow Canal--Guidebooks) (MIRA 12:10)

SOBOTOVICH, Ivan Dmitriyovich; SOBOTOVICH, Yevdokiya Pavlovna;  
SOKOLOVSKIY, Yu.Ye., retsenzent; IVSHIN, Ye.A., retsenzent;  
TYUKAVIN, I.N., red. izd-va; BODROVA, V.A., tekhn. red.

[Along the Moscow Canal] Po kanalu imeni Moskvyy. Moskva, Izd-  
vo "Rechnoi transport," 1962. 123 p. (MIRA 15:5)  
(Moscow Canal region---Guidebooks)

SOBOVA, Alena, RNDr.

Body weight and height of infants under three years of age in Prague.  
Cesk. pediat. 11 no.5:341-348 May 56.

1. Ustav pro peci o matku a dite v Praze -Podoli, nahr. K. Marxe c.  
157 Reditel: univ. prof. MUDr. Jiri Trapl, nositel Radu republiky  
Prednosta pediatrickeho vyzkumu: Doc. MUDr. Kamil Kubat.

(BODY WEIGHT, in infant and child,  
statist. in inf. in Czech. (Cz))

(BODY HEIGHT, in infant and child,  
same)

CZECHOSLOVAKIA/Human and Animal Physiology. Internal Secretion

T-8

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65415

Author : Hostonska L., Kottova V., Sobova A.

Inst : -

Title : A Comparison of the Anabolic Effect of Testosterone and Methylandrosteradiol on Proteins in Cases of Growth Retardation in Childhood.

Orig Pub : Vnitřní lékařství, 1957, 3, No 7, 620-630

Abstract : A study was performed on 83 children whose growth was retarded. Forty-nine children received 10-20 mg of methyltestosterone for a period of two months with a subsequent six-month interruption. The average duration of treatment was  $3\frac{1}{2}$  years. The remaining children received 25 mg of methylandrosteradiol daily until reaching the ossification age-level ( $\sim$  1 year, on the average). The growth retardation in the children was associated with hypopituitarism, Turner's syndrome, chondrodystrophy and other causes. No substantial

Card : 1/2

MECIR, M.; SOBOVA, A.; HRUBCOVA, M.; KREJCOVA, M.

~~Physical condition & nutritional status of 0-3 year-old~~  
Physical condition & nutritional status of 0-3 year-old  
children in the Pardubice region. Cas. lek. cesk. 96 no.  
24-25:791-800 21 June 57.

1. Ustav pro peci o matku a dite Praha-Podoli, reditel prof.  
dr. J. Trapl, vedouci pediatrickeho vyzkumu prof. dr. K. Kubat  
Ustav organisace zdravotnictvi KU v Praze, prednosta prof. dr.  
V. Prosek. M. M., Praha-Podoli, Nabr. K. Marxe 157.

(INFANT NUTRITION, statist.  
in Czech. (Cz))

(CHILD  
phys. cond. of Czech. child. (Cz))



SOBOVA, A., Dr.

70th anniversary of the birth of MUDr. Ludmila Lukasova. Cesk. pediat.  
8 no.6:547-549 5 July 58.

1. UPMD, Praha-Podoli.

(BIOGRAPHIES

Lukasova, Ludmilla, biobibliog. (Cz))

*SOBOVA A.*

BLAZEK, F.; HRUBCOVA, M.; KAPALIN, V.; ODCHAZELOVA, E.; PROKOPEC, M.; PROSEK, V.;  
SOBOVA, A.

Examination, follow-up & assessment of physical growth & development.  
Cesk. pediat. 13 no. 4:296-303 5 May 58.

1. F. B., Praha II, Ke Karlovu 2.  
(GROWTH, in inf. & child  
measurement (Cz))

SOBOVA, Alena

Comparison of graphic method for the investigation of child development up to 3 years of age. Cesk. pediat. 15 no.5:442-447 My '60.

1. Ustav pro peci o matku a dite v Praze-Podoli, reditel prof. MUDr. Jiri Trapl, vedouci pediatrickeho vyzkumu MUDr. Karel Polacek.

(GROWTH)

BALAK, Karel, C.Sc.; SOBOVA, Alena, C. Sc.; VALENTOVA, Jaroslava

Total consumption of oxygen in a case of late gestosis. Cesk.gyn.  
25[39] no.7:521-528 S '60.

1. Ustav pro peci o matku a dite v Praze-Podoli, reditel doc.  
M.Vojta, zaslouzily lekar CSSR.  
(PREGNANCY TOXEMIAS metab.)  
(RESPIRATION in pregn. )